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Electricity on the Farm

A Monthly Magazine for the Progressive Rural Family

March, 1930

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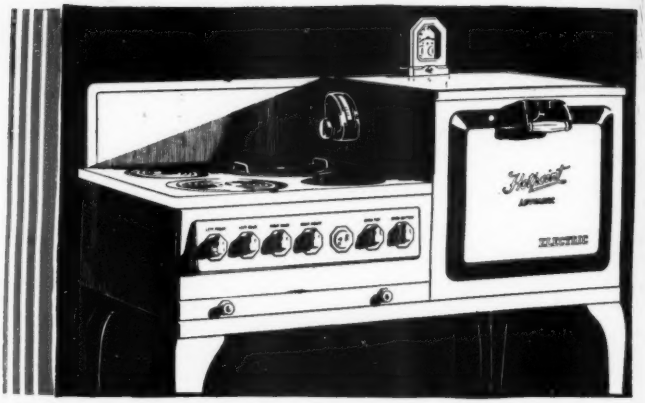
MERCHANDISING SUPPLEMENT

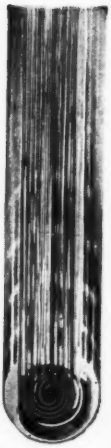
for distribution only to

Farm Equipment Dealers and Power Company Representatives



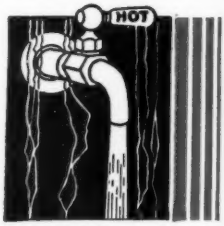
ECONOMICAL ELECTRIC COOKING

for America's farms



OVER a million women on farms, in villages and towns all over America now cook electrically. Their average cost is approximately 15c a day. For a family of five this is only 1c a meal per person. Hotpoint automatic electric cookery is not only better, easier and cleaner—but more economical than you may realize.

Only Hotpoint has *Hi-Speed Calrod,* which makes the Hotpoint Automatic Electric Range even faster and more economical than before. There are models at prices to meet every requirement. Your electric company will gladly give information—or write us for literature.



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You can have a constant supply, always on tap, economically. Hotpoint makes a large line of automatic electric water heaters, all with the patented *Hi-Speed Calrod* element. A model for every pocketbook.

The new Hotpoint HI-SPEED CALROD element. One of the reasons why Hotpoint ranges are so economical and so amazingly FAST.

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Write for catalogue showing the complete line.

Goulds Pumps, Inc., Seneca Falls, New York

GOULDS PUMPS

Electricity on the Farm

Vol. 3 MARCH, 1930 No. 3

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Monarch

By unique construction, Monarch puts SPEED into both oven and open top units. The built-in kitchen heater is another feature important to farm homes, where heat in the kitchen on chilly mornings is most welcome. For details, ask your Electric Light Company.

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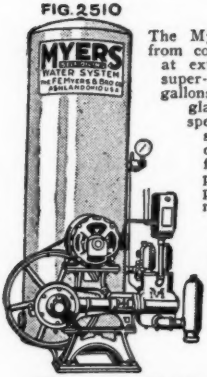
IT doesn't require nearly as much coaxing to get "help with the dishes" when there is plenty of running water on tap. Why not find out—right now—how little it will cost to get a **real** water system for your farm. Clean, sparkling-fresh water always on tap—in kitchen, bathroom, laundry—for lawn, garden and garage—in barns and feed lots—for drinking, washing, fire protection! Check up the hours you spend lugging water from place to place—doing by hand what can be done far better by a few cents worth of gasoline or electric power. You **need** a water system for your farm—and you need a genuine Myers outfit to assure that your investment will be a permanent improvement.

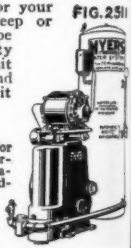
MYERS Self-Oiling Water Systems

FIG. 2510



The Myers line offers you practically unrestricted choice—from complete electrically-operated or gasoline-engine outfits, at extremely low prices, for the small home to super-service plants with capacities up to 10,000 gallons per hour. Your nearest Myers dealer will gladly advise you as to the best outfit for your special needs. Whether you have a deep or shallow well, and regardless of the type of power you wish to employ—electricity from central station or your own unit plant—windmill—gasoline engine—hand pump—there is a modern Myers unit ready to serve you.

FIG. 2511



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Makers for over 50 years of Myers Pumps for every Purpose, Hay Tools and Door Hangers

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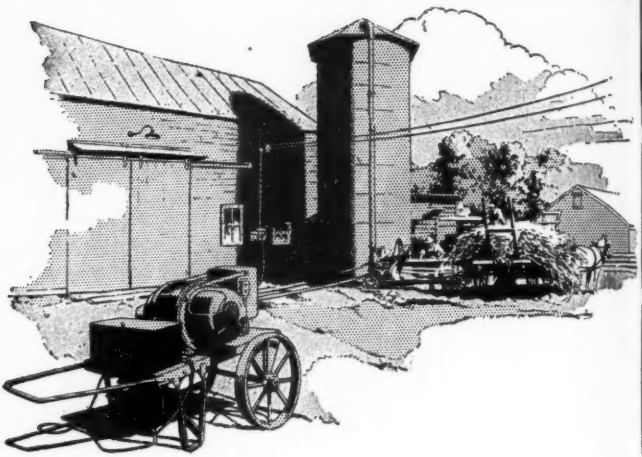
No need to shiver on cold, dark mornings if you have a Westinghouse Solar Glow Heater installed in that exposed room and the bathroom. Provides clean, safe heat in a jiffy. Cozy Glow Heaters, too, throw plenty of comfortable heat anywhere you want it. Move them around—they're portable. Not only useful in the house, but fine for keeping new-born stock warm in the very coldest weather.

These quality heaters, plus a Westinghouse Warming Pad for relief from aches, pains and circulation troubles, will make every winter a cozy one. Look for the name Westinghouse. It is your protection when you buy electrical equipment for the farm. There's only one Westinghouse grade—the best that can be built.

Westinghouse



Where Motors *are cheaper than* Muscle

Let the electric motor fill your silo—its cheaper, easier, swifter. And this is just one of the many applications where G-E motors, controllers, and other electric equipment cut costs and labor.

Electric grain elevators, motorized grinders, huskers, and shredders will save four-fifths of the time you now spend on these jobs. G-E motors can economically pump your water, do your threshing, milk your cows, separate the cream, and sharpen your tools.

For farm households, G-E MAZDA lamps, refrigerators, fans, and cooking and heating appliances are economical labor savers.

If you are located on or near an electric power line, ask the power company for complete information concerning the possible uses of electricity on your farm.

Tune in on the General Electric Special Weekly Farm Program on WGY (Schenectady). In addition, join us in the "General Electric Hour" broadcast every Saturday at 9 P.M., Eastern Standard Time, on a nation-wide N.B.C. Network.

GENERAL ELECTRIC

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Electricity on the Farm

Vol. 3 MARCH, 1930 No. 3

Time for Overhauling

There's always a tendency to put off until tomorrow those tasks which are not pressing for today. Particularly is this so with regard to the repairing of farm machinery and equipment during early spring. In any business—and certainly farming is a business—success is primarily dependent upon proper and timely preparation. And this in turn depends largely on vigilance. A careful checkup of equipment to be needed for spring work must be made earlier in the year and any repairs required should be made so that when the time arrives to employ it there will be no avoidable delays.

An old adage tells us that "eternal vigilance is the price of success," but for farm adaptation it should be reworded: "Eternal vigilance with prompt action is the price of success."

Farm machinery which has stood inactive all winter needs thorough inspection and overhauling before it is sent out into the field. Small defects or injuries which did not put it out of service the past summer may prove serious, as a result of stiffness due to idleness, when the equipment is again put to work.

Now is the time for reconditioning your equipment. Take it out and give it the inspection which it deserves. Make necessary repairs. Reinforce it where it is weak; and in this connection it will be found that a well equipped shop, with power driven machinery and proper lights, will take most of the drudgery out of this part of the necessary spring work.

Electric Heat for Barnyard Babies

New Born Animals Require Artificial Heat in Cold Weather; A Profitable Practice

By Richard Boonstra
Agricultural Engineer*

WHILE electricity has now been used for fifty years, many of you will remember when you sat in your farm homes in the evening and thought of electricity only as a means of lighting up your houses and barns. As the number of uses of electricity increased, you gradually came to know that the small electric motor could replace a good sized gasoline engine. Today it is possible for you not only to use electricity for lighting, but to use it for doing a large amount of your farm work such as milking, pumping water, grinding feed, hoisting hay, etc.

There are very few of you who are enjoying the full benefits that electricity can bring in the form of heat. How many of you are now using or have used an electric heating pad, which takes the place of the old fashioned hot water bottle? How many of you are cooking with the electric range? There should be an electric range in every farm kitchen in the United States.

We Use Electric Heat at Mundelein

How many of you are using some form of electric heat in the barn—which is something I would like to say a few words about. On our farm at Mundelein, we get some very severe cold weather during the months of January, February, March, and sometimes the first part of April. Consequently, we have found many uses for an electric sun bowl heater like the one shown in the picture, having a heating element of 1000 watts—the hot air being moved with a fan. It has been especially good for use on young pigs in very severe weather.

Sun-bowl Heater Suitable for Permanent or Temporary Use

We have found that such a small heater is very convenient to install, and that it lends itself very well to temporary use. Last year our pigs were farrowed in February, and for about five or six days we used the small electric heater shown. We believe that if we had not used this heater, we would have had to install some type of coal or oil heater, which of course, always require considerable attention, and are not as convenient as heating with electricity. We also know that if no heat whatsoever had been applied, we would have lost quite a few of the pigs the first and second days. Since that time we have found quite a number of farmers in this section using the electric portable heaters in their farrowing pens during temporary cold weather spells. Several farmers are also using such heaters on lambs born in February and March.

Mr. C. P. Wagner, Rural Service Engineer of the Northern States Power Company believes that it would be more advantageous for farmers to build brooders somewhat similar to the chick brooders, but of course, built strong enough so that they could stand the wear and tear that they would subjected to by a bunch of pigs. Such a brooder would have a number of advantages over the sun bowl heater in that it would save considerable heat and would

*Public Service Company of Northern Illinois.

have a tendency to apply the heat where it is most needed. Therefore, it might be operated considerably cheaper.

Perhaps some college experiment station could make up some experimental electric pig brooders and give us the benefit of their recommendations. Those of you who make a business of raising early spring pigs should make sure that your wires are extended to the field where the portable hog houses are, so that you may be able to get the full benefit of electricity at the exact time you wish to make use of it. Perhaps with the benefit of electricity you may be able to farrow pigs as successfully in January as in April, which means that you would be able to market your hogs considerably in advance of the season's low price in December or January.

While I am reminding you not to forget to wire the portable houses used for the raising of little pigs, I would also like to recommend that you give some thought to properly insulating those houses. At the present time very little thought is given to the insulation of hog houses. It should be considered as necessary as it is to feed the pigs the proper fattening food. A properly insulated hog house will not only keep the pigs comfortable in cold weather, but also will be a great aid in keeping them cool in the summer time. A small amount of electric heat will be much more helpful in an insulated house than in one not insulated. Also, pigs living in insulated houses will grow better if they do not have to eat their feed as they shiver in the cold.

Yours for more comfortable pigs, which in turn will make you more comfortable after they have gone to market.

Mountaineer Mathematics

The keen-eyed mountaineer, realizing that his overgrown son was much behind in his education, decided to do what he could for him; so he led him into a country schoolhouse, and said to the teacher in charge: "This here boy's arter larnin'. What's on your bill o' fare?"

The teacher not realizing the mountaineer wasn't familiar with all the subjects, said:

"Our curriculum, sir, embraces geography, arithmetic, trigonometry——"

"That'll do. Load him up well on triggernometry. He's the only poor shot in the family."

Sun-bowl Heater Sheds Radiant Heat on New Litter. This heater is used for five or six days on the young pigs

Better Brooding

By E. R. MEACHAM

An Electric Brooder Cares for These Ducklings at Night

ONLY the other day I heard a man talking to a group of his neighbors about electric brooders. After he had pointed out how easy they are to take care of, how accurately they control the temperature, and how economical they are to operate, he stopped a minute, looked the group over, and with a merry twinkle in his eye, he solemnly added,

"Do you know, of the broilers we sold last June, not one of them had a wishbone? No, sir. We kept those chicks so happy under an electric brooder that they had nothing to wish for."

I did not see the chicks myself. I can only give you his word for it.

But if you raise chickens on your farm, springtime means brooders of some kind, and you may be interested in learning just how electric brooders are doing the job. The electric brooder has a metal canopy not very different from the hover of any other brooder, except that it is well insulated to hold the heat and save current. The heat is produced in wires very much like those of an electric toaster. The current passing through these wires warms them, (but should not get them red hot) and they warm the air under the hover. In a good brooder these heating elements are well distributed so that they can give a gentle, even heat everywhere.

Temperature Kept Uniform by Switch on the Brooder

There is a switch on the brooder itself that keeps the temperature uniform. It may be made of a wafer filled with ether that expands when it gets warm and opens a pair of contact points in the electric circuit, stopping the flow of current. Then when the air under the brooder drops below the temperature for which the switch is set, this wafer contracts again and lets the connections come together so that electricity can flow through the wires. This goes on again and again. You can see plainly enough that if it turns cold outside, the current is going to stay on a longer time to keep the hover warm. Or if the warm sun beats into the brooder house, and the thermometer rises.

the current will be off for longer periods. But you, yourself, need not worry over these changes. That little switch with its wafer that is so sensitive to heat or cold, a switch we call a thermostat, will regulate the brooder for you.

Last spring I went out to call on Mrs. E. C. Haupt on Arlington Prairie in Southern Wisconsin. Mrs. Haupt was using electricity for the first time in raising her chicks. She had a fine new brooder house and was starting four hundred chicks under an electric brooder.

Chicks Learn How to Warm Themselves

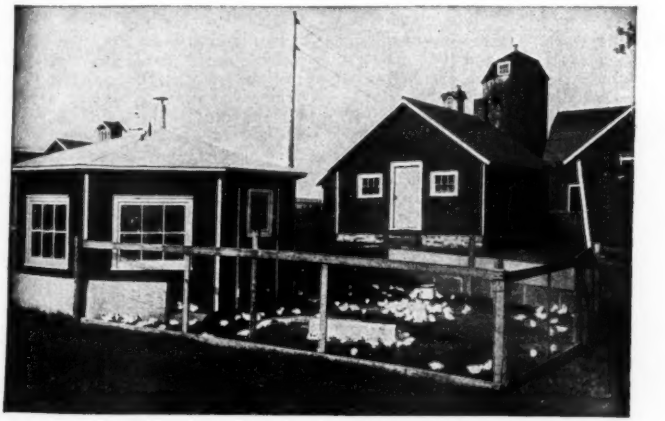
When she first put the chicks under the hover, she made a little fence around the brooder to keep the chicks in, for when they went out to drink, they spattered themselves all up, and stood around wet and miserable instead of going back under the brooder. That fence kept them from going off in some corner to shiver, and they quickly learned where they could get warm and dry.

Of course Mrs. Haupt knew that absolute cleanliness is requisite for healthy chicks, so that brooder house had a thorough cleaning every day. She kept burlap bags on the floor under the hover. These bags were washed and boiled with a disinfectant every morning at first. This was all very fine, but to save labor, she later compromised by rinsing them off with the disinfectant and cleaning the floor with hoe and broom. The door of her brooder house has a special glass that lets the ultra violet light through. All of the windows can be opened from the top so the chickens get no draught.

At first Mrs. Haupt thought the house was too cold on early April mornings, and she worried because the bags on the floor were damp with the condensation of the moisture in the air,—but neither of these conditions bothered the chicks apparently. At two weeks old they were a fine healthy lot, and the losses were so slight that she considered them unimportant.

A mile or two away the W. A. Schroeders live. I knew they had been using an electric brooder for more than one season, so I stopped in there to ask Mrs. Schroeder how her chicks were getting along this year.

"Just fine," she assured me. "You know we wanted to trade in our old brooder this year and get a larger one, but we didn't see the salesman, and it got time for the chicks to be delivered, so we borrowed another medium sized



Mrs. Haupt's Brood Certainly Has Nothing to Wish For

brooder of a neighbor who was going to get his chicks later. We plugged in both brooders, divided the brooder house floor into two pens, and put one hundred fifty chicks on each side. They did so

The Electric Brooder Kept Them Healthy and Comfortable

well, they grew so fast, and were so thrifty that we are convinced that is the best way to start them.

"We kept those chickens under the two brooders for three weeks. Then our neighbor's chickens came, and had to have his brooder. It was warmer then so we put them together for about a week more. They were so well started that they didn't need much more brooding."

"Did you raise most of the chicks?" I asked. "We only lost eighteen of the lot," Mrs. Schroeder answered.

And that, it seems to me, is a mighty fine record. When they were a month old those chickens were perching on the roosts. I never before saw a flock of such young birds so well taught to roost. They were so amusing that I tried to get a picture of them all balanced solemnly on their low perches.

Because Mrs. Schroeder raises ducks as well as chickens, she had to take the brooder away from the chicks—when they were less than a month old and get her ducklings started.

"You can pick up that brooder and get ready for a new brood anywhere in half an hour," she said. "For the ducks I put it in a box stall in the barn where I would never dare put any other kind of brooder."

When we were there the forty-six little ducks were penned in a triangle out in the Spring sunshine. By the time we finished taking the picture of them, the afternoon sun was pretty low and Mrs. Schroeder gathered up the ducklings in a little box and carried them into the barn and put them under the brooder for the night.

Everyone who is interested in brooding chicks electrically is naturally curious about the cost of the current that warms them. That depends.

It depends on the weather outside; it depends on the way the brooder house is built; it depends on how warm you keep the brooder.

Down in Indiana they have been making an intensive study of electric brooding for the last few years. Table I gives the results of four brooding tests made at the College of Agriculture from February 2 to March 28 in 1928. The costs are figured with coal at

TABLE I

Comparison of Coal Brooder With Electric Brooders of Varying Wattage

	Electric Brooder 52" Square			Hard Coal Brooder
	500 Watts	1000 Watts	1500 Watts	52" Round
Chicks Started	308	308	308	308
Chicks Lost in Eight Weeks	85	111	73	146
Chicks Raised	223 (72.4%)	197 (64.2%)	235 (76.6%)	162 (52.6%)
Average Weight at Eight Weeks	1.29 Lbs.	1.20 Lbs.	1.29 Lbs.	1.30 Lbs.
Fuel Used in Eight Weeks	689 KWH	852 KWH	779 KWH	1156 Pounds
Fuel Cost per Week per 100 Chicks Raised	$1.16	$1.62	$1.24	$0.71

Results of electric brooder tests on Indiana Farms.

Table II

Tests With Coal-Operated Brooders

	660 Watt 52" Square	600 Watt 52" Square	600 Watt
Chicks Started	311	403	527
Chicks Raised	269 (86.5%)	373 (92.6%)	511 (97%)
Time of Year	Apr. 30- June 15	May 22- July 3	Apr. 15- June 3
Days Brooded	46	42	49
Total Energy Used	122 KWH	70 KWH	156 KWH
Energy per Chick Raised	.457 Kw.Hr.	.189 Kw.Hr.	.311 Kw.Hr.
Fuel Cost per Week per 100 Chicks Raised.	.21c	.10c	.13c

Tests With Electrically Operated Brooders

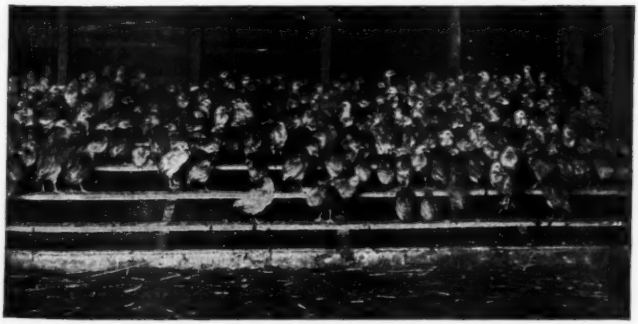
	56" Round 1000 Watt	62" Round 660 Watt	72" Round 550 Watt
Chicks Started	300	339	801
Chicks Raised	204 (68%)	322 (95%)	753 (94%)
Time of Year	Mar. 17- May 21	Apr. 17- June 4	Apr. 20- June 1
Days Brooded	65	48	42
Total Energy Used	468 KWH	139 KWH	63 KWH
Energy per Chick Raised	2.29 Kw.Hr.	.431 Kw.Hr.	.084 Kw.Hr.
Fuel Cost per Week per 100 Chicks Raised.	.74c	.19c	.04c

$16.00 a ton which was the prevailing price at time of tests.

These operators thought that they were running the brooders as economically as they could, but reports on half a dozen brooders out on Indiana farms show that under actual farm conditions, electric brooding can be justified on a cost basis as well as from the standpoint of convenience, safety, and percentage of chicks raised. These results are shown in Table II:

In speaking informally on electric brooding to a group of agricultural engineers in Chicago last December, George Kable, formerly of Oregon, and now in charge of the National Rural Electrification Project near Washington, said,

"Of course everyone wants to know what happens when the power goes off. Let me tell you about our experience out in Oregon. We had some three-day-old chicks under electric brooders. The weather was cold and rainy. Everything was drenched with water outside. The power went off. We herded the chicks under the hovers and put burlap over the



Mrs. Schroeder's Chicks Were Trained to Perch Before They Were a Month Old

top. The power was off for about two hours and a half. The chicks were all right; they stayed perfectly comfortable. They did not crowd or pile up at all.

"There were some rather curious and interesting things about that service interruption. One brooder was 85° at the start. With the chickens all penned inside, it warmed up to 93° at the end of two hours and twenty minutes. In another brooder of different type, the temperature dropped from 82° to 74°. Still a third dropped only from 95° to 91°.

"This convinced us that if we knew it as soon as the power went off we could take care of the chicks all right."

To be sure, improved line building and wider inter-connection that lets your power company draw current for you from half a dozen different power houses instead of one, are greatly reducing the number of interruptions to service.

There are several devices on the market to give you warning that the power is off. Some warning devices are built to connect directly to the brooder circuit, and will warn you of current off, temperature drop, or thieves breaking in to steal.

Change Here *to a Lighter Coat!*

ONE of the most important steps in conditioning and toughening farm animals for field work in the spring of the year is to give them a good clipping all over before the heavy work commences.

The long coat of hair, provided by nature as protection against the rigors of winter, becomes a handicap to the animal in the spring. Soft after a long rest without much of a grain ration, the horse or mule sweats easily. The dust and dirt of the field settles at the roots of the long hair, clogging the pores of the skin which must function freely if the animal is to do its work well. Clipping the hair short removes the clinging place for dust and dirt. The animal is kept clean easily and toughens to the work much quicker than an unclipped animal. It is well known that a clipped horse or mule looks better, feels better and works better than an unclipped one. A good clipping in the spring has the effect of a tonic.

By clipping the animal, its shedding period is gotten over in a hurry and without the need of end-

(*Continued on page* 34)

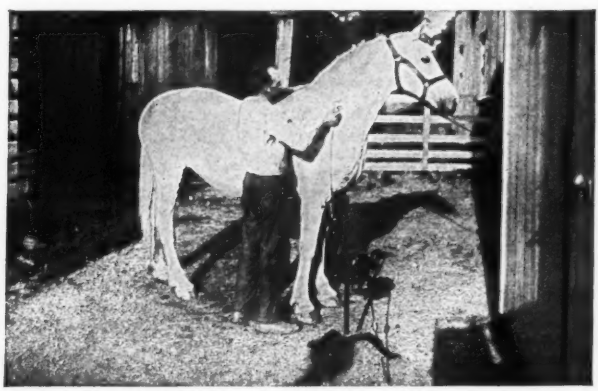


Photo courtesy of Cleveland Electric Illuminating Co.

The Electric Clipper Does a Fast, Clean Job

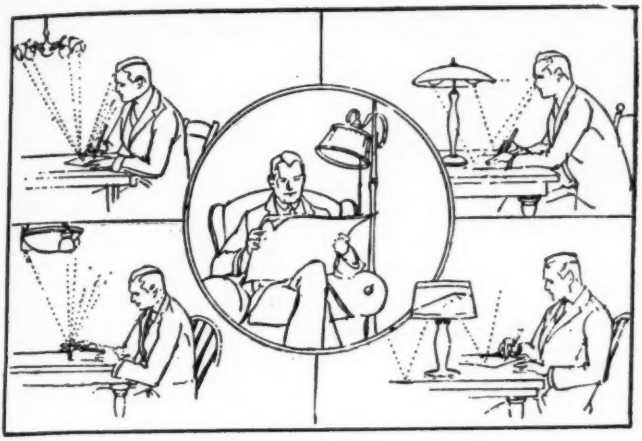


Fig. 1

The Proper Use of Mazda Lamps in the Home

By Robert L. Zahour*

HAVE you ever gone into a room at night and felt that there was too much light in the room? Perhaps it was because you came in out of the dark, and your eyes were dazzled by the light. If this feeling of dazzle persisted, there was surely something wrong with the lights.

It was not too much light, however. For in that room there was certainly not more than one-hundredth part of the light that we find during a clear day on the shady side of a tree or building. Nor one-five hundredth part of what we are accustomed to find in the bright sunlight. Surely, then, the trouble in that room was not too much light!

Glare

The trouble in that room was too much glare—too much dazzle. Any very bright light which shines directly into the eyes produces glare and eyestrain. This becomes more and more unpleasant as the light stands out with greater contrast to the darkness of the background.

Lights for use in the home have improved quite rapidly during the last two or three generations and as soon as a better light was invented, we just put the new one in place of the older one. First the candle was replaced by the oil lamp, and this in turn by the gas light. When the modern incandescent lamps were invented and used in homes instead of gas, they gave more light and were much brighter than anything we had before.

A bright light burning outdoors in the day might not even be noticed, and it would not cause glare because there would not be enough difference between the brightness of the light and the brightness of

*Commercial Engineering Department, Westinghouse Lamp Company.

the daylight. However, at night this same light would be quite disagreeable and might not be very good for our eyes.

In order to protect our eyes, all lamp bulbs should be shaded in such a way that we cannot see the lighted filament or wire inside the bulb and so that we do not even see a very bright spot in the shade directly in front of this lighted filament. When lights are shaded in this way, it is hardly possible to get too much light for comfortable vision.

Whenever you hear someone say that there is too much light in a room, it is safe to say the real trouble is not too much light, but rather that there is too much dazzle and glare and that the lights are not properly shaded.

Another Kind of Glare

How tired our eyes become after a day on the water, or when the sun shines brightly on the snow-covered ground. Do you remember the mischievous boy in the classroom who caught a beam of sunlight in a mirror and reflected it into your eyes? It made you start. These things are particularly annoying because our eyebrows give us no protection from this indirect or reflected light which comes in from below the level of the eyes.

This kind of glare must also be guarded against if we are reading or writing on glossy paper. The light should come over the shoulder or be directed to the page at such an angle that a beam of light from the lighted filament of a lamp bulb cannot be reflected up into our eyes. Lamps placed in front of a mirror and shaded by shields should not be placed in such a position that the mirror will reflect the image of the lighted filament of the lamp bulb back into our eyes and cause this kind of glare. In Fig. 1 the two lower pictures show how to improve the bad lighting featured in the upper views. The man at the left shaded the light and changes his position; the man at the right changed the type of shade on the table lamp. The picture in the center shows a good arrangement for reading under a bridge lamp.

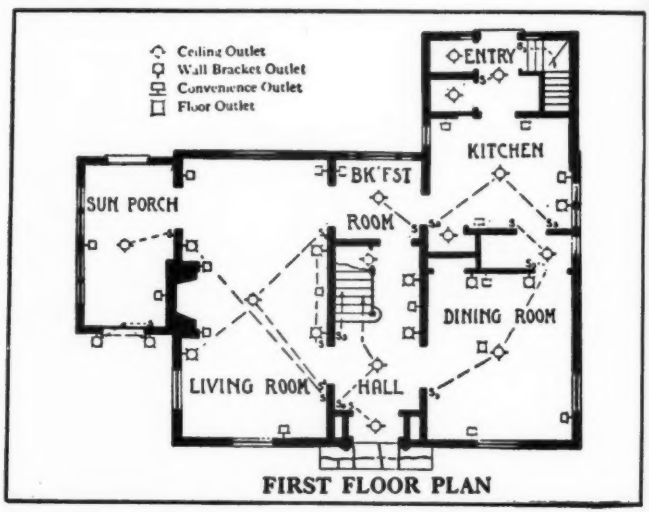


Fig. 2. Plenty of Convenience and Other Outlets Feature This Layout

If we are to see objects, the light must fall upon them and be reflected from them. The more darkly they are colored, the more light is needed to enable us to see them. The light that falls on objects which we wish to see may be termed useful light. Most electric lamp bulbs when used without shades or reflectors throw out light in all directions—just as much to the ceiling and walls of a room as down to the table top. Well designed shades are made so that they not only soften the light, but also reflect some light that would otherwise be wasted and direct it downward and outward to the objects that we wish to see.

Decorate With Light

Up to this point we have thought of lighting only as it helps us to see easily—in other words, as it is useful. Of course, this is very important in every room in the home, and everywhere else. But when we light our home, we want the lighting to make each room pleasant and attractive, and our lighting, except for the work rooms (the kitchen, the laundry, the basement and attic), should be as much of a decoration or ornament as the pictures and rugs and curtains.

Lighting equipment may be ornamental and decorative, and at the same time it can be made in such a way that it will properly light the room. Much of the lighting equipment in use today can be greatly improved by using shades that are longer, so that the bulb is completely hidden from the eye.

A Few Cautions

Here are a few cautions that will help you protect your eyes:

Don't judge the amount of light in a room by the brightness of the bare, unshaded bulbs. That is the indication of glare.

Don't expose your eyes to unshaded lights. That may cause eyestrain.

Don't read while facing a bright light or a sunny window. Have the light come from behind you or over your shoulder.

Don't use bright lights against a dark background.

Don't try to read in a dim light

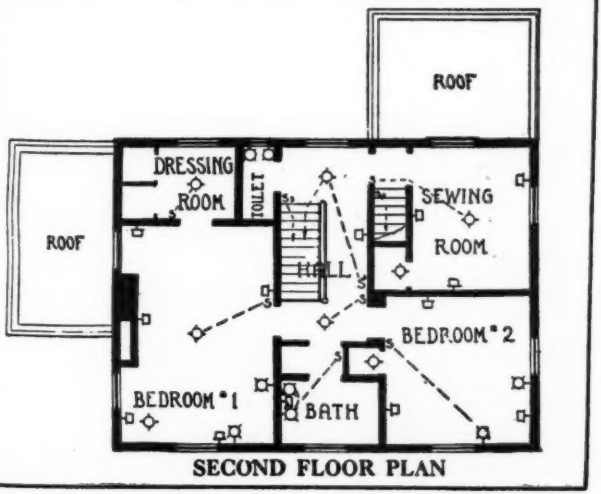


Fig. 3. Fewer Outlets Needed on Second Floor Than on First

that tires your eyes.

Don't let your lighting equipment get dirty. Clean it regularly. Dust and dirt may cause you to lose as much as one-half or even three-fifths of the light that the bulbs produce and that you are are paying for.

Don't depend on taking out light bulbs to connect appliances and portable lamps.

Don't be indifferent to the preservation of your eyesight.

Electric Pump Our Best Servant

By GRACE B. BAERTSCH
R. R. 4, Baraboo, Wis.

WE have an automatic electric pump, with pressure tank attached, and there is no other equipment on our farm, electrical or otherwise that seems so wonderful to us. We have had it for almost three years now and it has certainly paid for itself many times over. We have such need of a constant source of pure, fresh water, that it is foolish to get along without such valuable aid if it is at all available.

Everyone has heard the old saying, "You never miss the water 'till the well runs dry." We know just what that means through actual experience, only it was the spring that went dry instead of the well.

When we came to our present farm we had a spring and a well. This well was so deep, and therefore so hard to pump water from, that we used the spring. Then one fall after an extremely hot, dry summer, our spring went dry and we were forced to use the pump. That was certainly a very hard job—to pump water for the stock and chickens, to say nothing of what we needed for household use. I was just as saving of water as I could be. But with all my care and saving, we used lots of it. And it seemed that the stock would never get filled up when they came out to drink.

The Well-House and Part of the Herd That Was Watered by Hand

So the next spring we decided that something must be done. And since we had had electricity on the place for about a year, we thought the best thing to do would be to buy an electric pump even if we had to borrow the money to pay for it. Which is exactly what we did. We knew that eventually it would pay for itself.

Of course we weren't quite like the darky who bought a piece of machinery after being assured by the salesman that it would pay for itself in a few months. When the collector came and asked for the first installment, the old darky said, "Why, dat selling man tell me dat air machine pay foh itself in a few months. Jes' you wait, sah—I'se willin' to let it pay you jes' as fas' as it can."

Pump Pays for Itself

So we bought our pump and felt that it paid for itself in the amount of labor saved. It is installed in the stone pumphouse, and it seems nothing short of marvelous to hear the pump working when no one is near.

Hot days in summer when fresh, cool water is so necessary and pumping by hand such a hot, tiresome job—cold, blustery days in winter when the task is so cold and disagreeable—these are all the same to the electric pump. It stands there a faithful, tireless, uncomplaining servant, and the constant guard of our absolutely essential water supply.

The Quickest Way

Jaywalker—"Say, Officer, can you tell me the quickest way to the hospital?"

Cop—"Sure. Just stand where you are."

Rural Lines Are Marching Through Georgia

By L. W. Gray

THE process of electrifying Georgia Farms has been going forward for several years. A great many interesting farm electrical developments have been the result and a great many more are in progress. Carrying electricity to Georgia Farms is a step forward in the Agricultural development of the State. It is rapidly bringing to the farm resident the city conveniences and helping to make the farm a more pleasant and profitable place to live.

The Walden Rural Line is one of the smaller farmers' lines but it represents the spirit of appreciation of the farmers in being able to get these electrical conveniences. This line has been in operation only two months. It is 2¼ miles long and has eleven (11) progressive farmers using electrical energy from it. Eight (8) of them are now using electric ranges, five (5) electrical refrigerators and three (3) water pumps, besides various smaller appliances.

Electrical rates have been constantly reduced until now any farm resident (where current is available) can light the home, cook and use and electrical refrigerator, pump water, and use many small appliances such as the washing machine, iron, toaster, etc., at an average cost of from $3.50 to $10.00 per month.

When one sees how economical these units are to operate and the convenience and pleasure they bring, it is a wonder there are not more of them in operation.

Georgia farmers are finding electricity not only useful in their farm operation, but practically indispens-

Concrete Highways and Rural Power Lines Are Making Georgia Farms Comfortable and Convenient Places to Live

Controlling soil moisture by means of overhead irrigation

able after once installed. What once was a luxury is a necessity today if modern methods are to be employed. Mr. R. F. Sams, Jr., a truck gardener, at Clarkston, Georgia has truck on the Atlanta market at times when there is a scarcity, in and out of season with consequent high prices. He accomplishes this by the control of soil moisture through overhead irrigation and also the control of insects and parasites. Electric lights in Mr. Sam's tomato patch, he says, give him practically complete insect control. To see the quantity of insects in the kerosene basins under the electric lights would convince any one.

Mr. R. L. Mathis, of Pantherville, like many others has completely electrified his dairy. He has installed a two (2) ton dairy refrigeration plant which furnishes him ample ice and refrigeration. His electrical machines, areator, cream separator, bottle filler and bottle washer all speak for what

R. F. Sams, Jr., controls insect pests and parasites by means of electric lights at night in his tomato patch

electricity is doing for him.

The cost of a modern dairy refrigeration plant varies widely with the demand, but a plant costing between $1500.00 to $2250.00 complete, serves a wide range of purposes for the dairy producing around 125 to 150 gallons of milk per day. The K. W. Hour requirements will range from 1000 to 1500 per month and higher where the demand for ice is greater. The cost is very economical and will invariably prove to be a good investment.

The Poultry Farmer is finding profit and pleasure through the use of electricity to grind the feed, pump the water and light the hen houses, for higher winter egg production.

Mr. H. L. Hosford has found that he can profitably incubate his eggs through electric incubators and then keep a portion of the chicks in battery brooders, electrically heated until eight weeks old. The chicks never touch the ground nor are they ever in the sunlight. Profitable broiler production during the high price season is carried on in this way with a minimum of space and time.

The rural communities in Georgia are also enjoying many benefits from the extension of electrical distribution lines from the high tension source of supply. Community enterprises are being carried on and developed rapidly. Cotton gins, small cold storage plants, canning plants are springup rapidly that offer the farmer a market for a diversified product. While there are many farms that are impossible to reach and cannot be economically served at the present time, it is anticipated that as the net work of transmission and distribution lines are carred further into the rural communities electricity will become available to many more of these farms.

Night Life On the Farm

Night life on the farm during the first few months of the year may not hold many attractions to the pleasure seeker, but there are compensations to the herdsman for the extra rounds and long night vigils during lambing and farrowing time. Most successful poultrymen, also, spend a goodly portion of their time in the brooder house during the first day or so with their baby chicks and make an extra trip of inspection during the night especially during stormy weather. They all realize that giving the babies a good start is more than half the battle and a little attention during this period will send more pigs to market and more pullets to the laying house this fall.

Bright Lights Make Work Easier

Bright lights are making this necessary work easier on nearly one million farms. While farrowing rails and better houses are doing much to cut down losses, "Edison's miracle" is a real blessing to one who has tried to give his attention by the light of a lantern to several sows farrowing at the same time. Well placed yard lights not only make it easier to get around, but when connected so that they can be turned on by pressing a button in the house or by the action of a burglar alarm, they offer protection against thieves. Later on, these yard lights will make it easier to refuel and grease the tractor after its long day in the field.

Lights Improve Bookkeeping

During winter evenings, the farm account book should receive attention, and the farmer who has good lights will find it pleasanter and easier to do more accurate work, just as the boys and girls in school do with their home work.

Carrying water to the house, or to outbuildings for the pigs and chickens, is not pleasant or profitable in any season and is especially disagreeable during the later winter or early spring months when the footing is decidedly uncertain and there is so much more important and productive work to do. Besides, who wants to compete with a motor at 2 cents an hour?

Plant Only Good Seeds

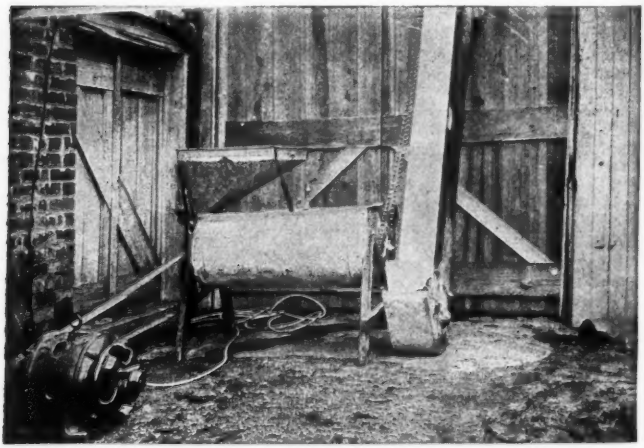
This Should Be the Aim of Every Farmer

By E. W. Lehmann

THE yield as well as the quality of the product grown will depend largely on the seed planted; to plant clean, reliable seed, therefore, should be the aim of every farmer. On every farm, where registered or certified seed are not bought, a fanning mill, or some type of seed cleaning and grading machine should be found, or at least the operator should have the use of such a piece of equipment. While many small graders and fanning mills are operated by hand, an electric motor is the ideal type of power to drive such equipment, and the rural electric service men are in position to render aid to the farmer in assisting him in his seed cleaning problems.

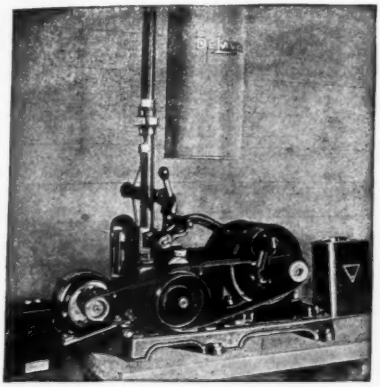
There are at least four good qualities of seed which should be considered in getting good seed for planting; all four qualities may be improved by careful cleaning, grading, and treating. They are vitality, uniformity, purity, and freedom from disease. There may be other qualities, however, these are no doubt the most important.

The better farmers tell us that in general seed that are large, plump and well ripened give better yields than small seeds, or those that are immature and shrunken. The mature seed have greater vitality, and if free from disease, will produce strong, healthy plants. The old method of winnowing the grain was the first method of seed



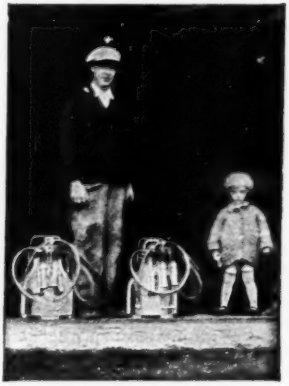
Machine for Treating Wheat Seed for Smut

For Real Pleasure and Profit



Installation of the electrically operated De Laval Magnetic Milker on the farm of Mr. Harold S. White, Auburn, Maine.

Mr. White has used other milkers but he now is an enthusiastic De Laval booster.



Electrically Operated De Laval Separators and Milkers

DE LAVAL Electrically Operated Separators and Milkers have brought greatly increased pleasure and profit into dairying. They have been important factors in revolutionizing dairy production methods—the turning from the slow laborious methods of our fathers and grandfathers to the modern, pleasant and much more profitable ways of 1930.

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cleaning. The chaff and the light weight, low vitality seed were removed by allowing a draft of air to pass through the grain as it was poured from one container to another. The ordinary fanning mill works on the same principle; it is a combination of screens and sieves to grade the seed according to size, with a fan to remove the weed seeds and other foreign material.

The second important factor in seed cleaning and grading is to grade the seed so that it is uniform in size as well as in quality. It is especially important that seed corn kernals be uniform in size to make possible accurate planting. Laboratory tests on the accuracy of corn planters show, where uniform ears were selected, the whole ear shelled and not graded, the drop of the corn planter was 66% accurate as compared to 92% to 95% accurate when seed of similar quality was carefully graded. Accuracy of drop is determined by the number of hills having the exact number of kernals desired in each one hundred hills planted. While the selection of the proper plates is important for a planter to drop the desired number of kernals in each hill, the planter will not drop accurately if the seed contains a mixture of large, small and irregular shaped kernals. Hand-grading of corn is often practiced; however, under most conditions machine grading shows an increase of accuracy over the hand method.

The necessity of purity or freedom from weed seeds should require no argument. No farmer wishes to plant weed seed along with his crop, yet this is what many do, due to lack of proper care of seed cleaning. Where seed are bought from a reliable seedsman there should be no worry on this point. In some states it is required by law that all seed sold in the state be tested and the results of the tests shall be attached to each container in which the seed are stored, or from which they are sold. The results of such tests usually give the per cent of weed seeds, the name of the most injurious kinds present, the amount of dirt or inert matter and other facts bearing on the purity. Any farmer having seed to sell should certainly have them thoroughly cleaned and graded before submitting a sample for such an analysis.

Although much has been said to emphasize the importance of plant-in high quality seed, many farmers continue planting each eyar seed that are mixed with weed seeds. Acording to reports made by the United States Department of Agriculture, one bushel of weed seed is harvested on the average with every seven bushels of wheat in the states of Minnesota, North and South Dakota. This enormous amount of weed seed has resulted in dockage which has cost farmers thousands, if not millions, of dollars. The planting of weed seeds each year is an important factor in increasing the weed seed harvested. Much has been done by the United States Department of Agriculture in developing equipment for cleaning the entire crop as well as the seed used for planting.

Diseased Seed Result in High Losses

In the corn belt, root rot diseases take a heavy toll each year, due to lack of care in selecting seed corn that is free from disease. While certain characteristics of diseased corn may be detected by the eye in examining the ears, the only safe plan is to use a seed corn germinator to bring out those characteristics of diseased corn, so they may be more readily recognized, and the diseased seed discarded. The electric germinator is best to use when seed are being tested for disease.

An important source of dockage in wheat due to diseased seed is smut. It is reported that estimates based on the Oregon State Grain Inspection figures show that the smut dockage in wheat coming into the Portland, Oregon, markets during one year amounted to 237,107 bushels, a loss to the farmers of that section of nearly $200,000. According to Federal reports, mil-

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lions of bushels of wheat are lost annually through wheat growing areas because of smut.

The smut in wheat is a fungus growth which infests the growing grain. When the wheat ripens each stalk infested produces a ball of fine dust-like spores, instead of a head of grain. According to the Federal grain grading standards, smutty wheat is defined as follows: "Smutty wheat shall be all wheat which has an unmistakable odor of smut, or which contains spores, balls or portions of balls of smut in excess of a quantity equal to two balls of average size in fifty grams of wheat."

Since it is almost impossible to remove all the smut from wheat in certain areas the general practice of treating wheat seed to control smut is followed. This is especially true in the Northwest. The use of copper carbonate dust is recommended as the most satisfactory treatment known for controlling stinking smut in wheat.

Farmers Treat Seed for Disease

A cooperative seed company at Toledo, Illinois, follows the practice of treating wheat seed for its farmer members. The machine used has a capacity of forty bushels an hour, and is driven by a one-horse power motor. As reported in Illinois Bulletin 332, Electric Power on the Farm, in treating the seed one man scooped the wheat directly from a wagon into the hopper of the machine, from which it passed into the mixing chamber, from there it was re-elevated into another wagon. The electric energy used in this operation was 2.61 kilowatt hours for each one hundred bushels of wheat treated.

On one of the Illinois electric test farms sweet clover seed which was harvested with a combine harvester contained considerable green material and it was thought it would be necessary to dry the seed by artificial means to put it in condition for storage. Equipment was set up for drying, but before putting the seed through the dryer it was first put through a fanning mill. It was found that practically all of the green hulls and other green material was removed by the fanning mill, and there was very little need for drying after the cleaning operation. An average consumption of .13 kilowatt hours was required per bushel cleaned. This energy operated the fanning mill, the elevator and the blower. The capacity of the fanning mill was thirty bushels an hour.

No Standardized Method of Cleaning With Fanning Mill

A problem in seed cleaning with a fanning mill is to determine the proper combination of screens, proper wind blasts, and proper rate of feeding to use to remove the particular weed seeds that are mixed with the seed being cleaned. Several years ago a series of tests were made at the Illinois Agricultural Experiment Station in an attempt to determine the proper combinations of sieves, wind blasts, speed and so forth for cleaning different classes of seeds. Samples of red clover, alfalfa and timothy were secured from the State Seed Analyst of the State Department of Agriculture at Springfield, Illinois. The most common weed seeds found in the samples secured were buckhorn, curled dock, wild carrot, and field sorrel. The results from the tests made would indicate that, in general, a special combination of screens and operating conditions must be selected for each lot of seed being cleaned. The principal difficulty which eliminates the possibility of a standardized method of cleaning seed apparently was the variation of the physical characteristics of the same kind of seeds in different lots tested. A particular screen that would remove a certain variety of seed from one sample would not be satisfactory for removing it from another sample. This was due to the fact that the particular seed in one sample might be more plump than another. It is worth while to know, however, that care must be observed in selecting a proper combination of screens, and that the machine must be properly adjusted for proper speed and air flow for each lot of seed to be cleaned to get good results.

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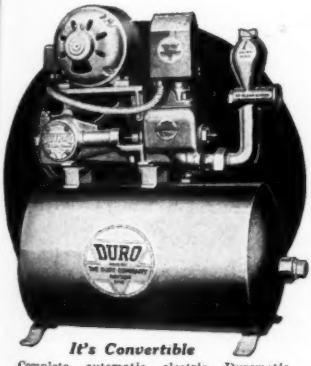

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There are machines on the market that separate the seeds entirely on the basis of shape and size. One machine of this type is made up of a series of discs mounted on a shaft. On each side of these discs there are pockets shaped to pick up the particular seeds that are desired to be removed. One set of discs may be provided with pockets to pick up wheat and separate it from oats. Another disc may have pockets to pick out cockle, wild peas and other noxious weeds, and leave the wheat.

Round pea or bean seeds can be separated from flat or irregular shaped seeds or cracked beans by allowing the seed to roll down a slanting surface with a crack or slot provided through which the seeds other than those which roll will fall.

Another principle used in seed cleaning machines is the difference in weight of the seed cleaned and the material which is removed by the cleaner. In some machines that clean on this principle, the separation is made by vibration. In other machines the cleaning is made by the use of air currents to remove the lighter material.

Energy Required for Cleaning

Kansas data reported in the CREA Bulletin, Vol. 4, No. 1, gives an energy requirement in kilowatt hours for cleaning and grading one hundred bushels of different seeds as follows: kafir corn 1, oats 1.8, wheat .67, sudan grass .95, and for grading seed corn 1.16 kilowatt hours. It is evident that the energy requirement for operating fanning mills and graders is very slight. However, the use of a motor for operating even the small size machines will save the time of one person and better results will be secured, due to the uniformity of the speed at which the machine is operated.

Agencies Interested

Farmers interested in better seeds should get in touch with their county agricultural agent, the state agricultural college or the state seed analyst if one is available. In some states Crop Improvement Associations have been formed, their object being to promote the idea of better seed. Seed passing certain tests and inspections is classified as certified seed. Piper and Morse in their book on the Soybean outline the requirements of different states for certification of soy beans.

In Indiana the requirements are as follows: The certification of soy bean seed shall be based upon a preliminary inspection of the crop in the field while in the pod before harvest, and a second inspection of a 2-quart sample of the respective seed which shall be sent by the grower to the Secretary of the Crop Improvement Association. All certified grain must contain less than ½ of 1 per cent of discernible mixture of other varieties. The habit of growth of the soy bean shall be noted to ascertain the probable variety in case of doubt. Whenever a field under inspection indicates by its habit of growth that it is not of the variety specified by the grower, the question should be settled by the inspector, and if the correct name can be applied to it, it shall be certified, but if the variety cannot be ascertained it shall not be certified.

Any farmer who does not purchase seed that is certified or registered for planting should be interested in seed cleaning and grading machinery. By proper cleaning and grading, and by testing the seed for germination and to eliminate disease, the farmer avoids the planting of weed seeds and diseased seeds, and has assurance of a better crop. He also saves the labor which would be wasted in planting seeds that will not grow and avoids the necessity of doing additional work in replanting his fields.

Explained

A State of Maine Yankee had a son at Harvard, and, believe it or not, received this note: "Dad: Send a hundred. Paul." On the same paper Father answered, "What for? Dad." On the same paper came the reply: "Dad: For" and it was signed Paul. The money went off that night.—*Boston Transcript.*

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Heating Water for the Dairy

By TRUMAN E. HIENTON

AN abundant supply of hot water may be as important as refrigeration for the dairyman. Both are of prime importance, but hot water, effectively used, helps to overcome the need of artificial refrigeration. For farms selling milk on a bacteria count basis hot water alone is not enough, but combined with refrigeration, it will enable the dairyman to market a product of high quality.

Perhaps the most important use for hot water on the wholesale dairy farm is rinsing the milking machine before and after milking. As a result of his investigations of this subject, Prof. E. H. Parfitt, dairy bacterologist at Purdue University, recommends that two gallons of cold water should be drawn through the teat cups of each unit immediately after milking, and followed immediately with not less than a gallon of hot water, at a temperature 160° F. or above.

Function of Hot and Cold Water

The cold water removes most of the casein and albumen in the machine and the hot water removes the milk fat as well as destroys many of the bacteria within the tubes. Recent experiments of Professor Parfitt have shown that the milker can be kept in a very satisfactory condition (to produce Grade A milk) by rinsing it just before milking with 1 to 2 gallons of hot water (not less than 160° F.) and then 2 gallons of cold water. Under this treatment, the rubber parts of the milker showed less flabbiness and looked cleaner than they did under any of the other methods studied.

An electric water heater to provide hot water for rinsing the milking units is used on the dairy farm of H. E. Cutler, Creston, Indiana. This heater is installed at one end of the dairy barn near the motor and milking machine vacuum pump.

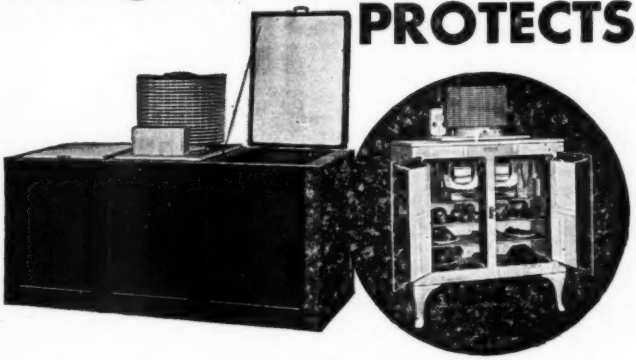
If a surface cooler is used it should be thoroughly washed with cold and then hot water. Professor Parfitt found that milk cooled over a surface cooler, as ordinarily washed, showed a considerably higher rate of bacterial growth than milk which was not surface cooled. The use of a chemical sterilizer in addition to careful washing reduced the rate of bacterial growth to below that if milk cooled by other methods.

Real Need for Hot Water On Dairy Farm

The need for hot water on the retail dairy farm which bottles its milk is greater than that on the farm which sells its product in cans. Hot water is required for the daily washing of bottles, and the usual morning and evening washing of the bottling machine and other utensils. Mr. John Fleischbauer, of Mulberry, Indiana, who markets his own product at a nearby town, has been using an electric water heater since September, 1928. With it Mr. Fleischhauer heats all water for washing 300 bottles daily, the bottling machine, tubular cooler, three milking units and other utensils. This heater consists of a well-insulated 18-gallon storage tank and a 200-watt immersion heater which is controlled automatically. This heater used 349 kw.-hr. per month during six months from May to November in 1929, or an average of about 11½ kw.-hr. a day.

This water heater was installed originally as an experiment by the

GENERAL ELECTRIC Refrigeration PROTECTS



—the family's food
—keeps milk quality high

Many farm families employ the household convenience, economy, and absolute ***dependability*** of the General Electric Refrigerator. Of the hundreds of thousands of owners, ***not one has spent a cent for service.*** It is the most inexpensive refrigerator you can own.

Now you can get the same dependability, the same low-cost operation in the New General Electric Milk Cooler. For it has the same type cooling unit as the General Electric Domestic Refrigerator.

It keeps bacteria count down and milk quality up. It saves labor and time, by cooling quickly, unfailingly. Thus it helps you get a bigger profit on the milk you hold for delivery.

See the General Electric Refrigerator dealer in your nearest town—or write Section **CZ-3,** Electric Refrigeration Department, General Electric Company, Hanna Bldg., Cleveland, O.

GENERAL ELECTRIC

REFRIGERATOR

Agricultural Engineering Dept. of Purdue University and replaced a steam boiler which had been used for heating water. After a few months use, Mr. Fleischhauer decided that the heater required so much less attention than the boiler that he would discard the boiler entirely. The water heater was installed at one end of the barn next to the milk room and is located very close to the tubs for washing bottles, and the suction cock of the milking machine used for rinsing the milker units.

At common prices, the cost of fuel is usually less when water is heated by coal or kerosene. But fuel cost is not the only, nor even the most important point in the selection of a heater. Fire hazard is of the greatest concern, and labor is probably the item of greatest expense with other form of heaters. But the electric heater, where automatically controlled, requires only momentary attention and certainly is less dangerous than the others from the standpoint of the fire hazard. Its perfect cleanliness and freedom from odors also make it especially appropriate for dairy use.

Factors Which Determine Type of Heater

The type of electric heater suitable for use on the dairy farm depends upon the rate paid for electric current and the amount of water to be heated. Any electric heater which is controlled by a thermostat should be well insulated to prevent heat losses and should have a trap in the hot water line to prevent any great movement of water inside the pipe. It is doubtful whether the cost of insulation is warranted for a small tank controlled by a hand switch and used to heat a few gallons of water daily. But such a heater furnishes the ideal solution to the water heating problems of the dairyman with a couple of milking machines and a few other utensils to wash.

Cop (to man driving past a stop sign): "Hey, there! Can't you read?"
Motorist: "Sure, I can read; but I can't stop!"

Lighter Coat

(*Continued from page* 16)

less currying. The thorough brushing which every hard-worked animal needs to remove dried sweat and clean the skin is much more effective. The saving in time is great. The improved condition of the animal is worth money at a time when the work must be done quickly and the horses or mules must carry the load.

Not long ago, it required an investment of about a hundred dollars to secure an electric clipping machine of known value and efficiency. But today, as efficient a machine, complete with ¼ H. P. electric motor, can be secured for less than half that amount. This new machine operates equally well on the pedestal or when suspended from overhead. One feature is the belt drive which can be used throughout the year for many other ¼ H. P. jobs on the farm. It is quickly belted to the root chopper, small pump, grindstone, and other equipment having this power requirement.

A Positive Forecast

Attorney—"Don't worry, you won't be convicted. The jury will disagree."
Client—"What makes you think so?"
Attorney—"I'm absolutely positive. Two of the members on the jury are man and wife."

Chief Petty Officer: "The enemy are as thick as peas. What shall we do?"
Officer of the Deck: "Shell them you idiot, shell them!"

TEMPUS FUGIT

or

The Song of the Breakfast Nook

Little Miss Muffet
Sat at a buffet
Eating her curds—
And *how!*

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Decide now to cool and store your milk this modern way—with ESCO and electricity. Ask for full details.

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World's Largest Manufacturers of Milk Cooling Cabinets

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ELECTRICAL HOUSEKEEPING

Conducted by
GAIL MEREDITH

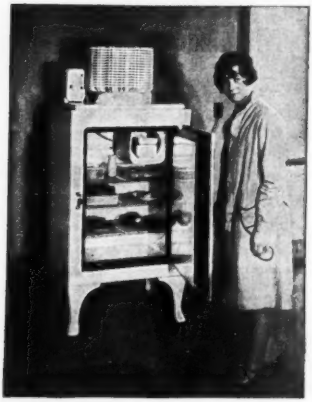
The Cost of Electricity for Electric Refrigerators

I WAS sitting with a group of farm women the other day watching a clever cook make a rusk torte. While the meringue was baking, we fell to talking about the electric range and the refrigerator she was featuring in her demonstration.

"The thing I want to know," said a woman on my left, "is what it will cost me to run a refrigerator if I get one this spring. I want one, goodness knows, but I'd like to have some idea what it will add to our bill."

The demonstrator smiled and told her readily.

And sitting there, I wondered if those women had any idea of the months and months of observation, of the countless reports and records, of the painstaking help some other farm women had given college investigators, to make that answer possible.



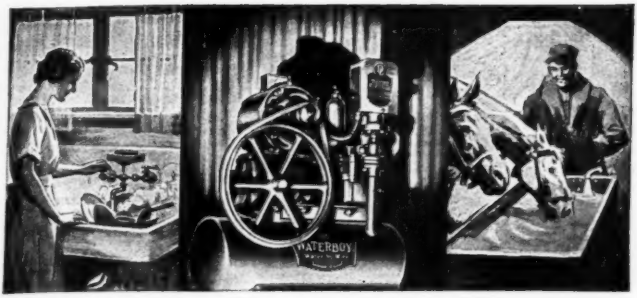
We are counting the cost of convenience as well as food preservation and safety

Only last June, South Dakota State College of Agriculture and Mechanic Arts published a report by Ralph L. Patty on *The Cost of Electricity for the Home Electric Refrigerator,* Bulletin 241. That bulletin gives you some idea of the details that go into such a study. Of course, there was a separate meter hung for each refrigerator. There was a thermometer hung inside each refrigerator in exactly the same place. There was a thermometer hung outside each refrigerator just the same distance away. There were little door tallies on each box so the housewife could keep a record of the number of times the box was opened.

They studied these records and tabulated reports for us on how much it cost to run the refrigerator for the whole year, on how much it cost to run it during the summer, and during the winter. They showed exactly how much difference it made in the current used if it grew one degree warmer outside. They discovered just how much difference it made when the refrigerator was placed in a cool place instead of a warmer one.

The difference in the amount of current used in different locations was so slight, that it seems to me that women would rather put the box where it was most convenient for them, instead of where it might possibly use a kilowatt hour of current less a week.

Of course, any woman realizes that these reports are not a direct prophecy of what she herself might use. That will depend on the part of the country she lives in; on the temperature of her box; on the number of times she or the children open the box throughout the day; and on the amount of food that is stored. But such records do show us exactly what some oth-



Here's $1,000 worth of luxury for a few cents a month

THE STURDY DELCO WATERBOY

ONLY $75 F. O. B. DAYTON

PUMP and carry water if you *like* to. But there's really no need of it since Delco-Light and General Motors engineers perfected the famous Delco Waterboy and priced it at only $75 f. o. b. Dayton.

Here IS a water system! It's built to last as long as the house it's put in. It runs itself, oils itself, starts itself and stops itself. So once the Waterboy is installed there's nothing to do but sit back and enjoy the thrill of turning the faucets and letting the Waterboy do all the work.

Is it worth $75 to have running water... hot or cold... in kitchen, laundry, bathroom? You'll say it's worth $1,000 after you've had the Waterboy a month!

So don't hold back. A small down payment is all you need to have a Waterboy installed. Take care of the balance in such a way that you'll never miss the money. Don't try to figure out a better way to spend a little money. *There isn't any.*

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er farm women have used.

We are warned not to put warm food into the refrigerator. Of course, that is sound advice, but I have frequently found crises in meal getting when half a cent's worth of electricity did not seem half so important as getting jello stiff or a frosting hard. And I put the hot food into the box without a shade of apology to my thrifty Scotch ancestry.

This summary from the bulletin gives the findings of the Dakota study. You will probably be interested in reading the whole report.

Four home electric refrigerators used an average of 379 kilowatt hours for one year.

Electricity cost the owners $11.91. Three of them were turned off during the winter.

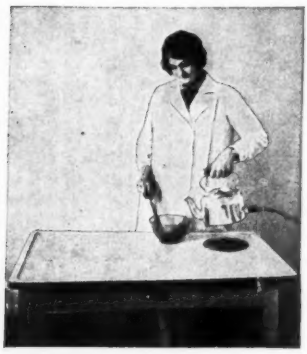
During the three warmest months of summer the refrigerators averaged 77 K.W.H. of electricity per month. This was the average of eight refrigerators.

The average electricity used by the refrigerators during the five coldest months of the year was 43.6 K.W.H. per month or 219 K.W.H. for the winter. At the local rate, it cost the Renner Line patrons $6.57 to run their refrigerators all winter.

The average temperature maintained by home electric refrigerators was 42.46 degrees Fahr. This is approximately 10 degrees Fahr. lower than the temperature maintained in ice boxes tested.

When the weather gets warmer the refrigerators use more electricity. An increase of 1 degree Fahr. for a week made the refrigerators use about one-third of a kilowatt hour (.29 K.W.H.) more electricity for the week.

A favorable location for the refrigerator in the house saves some electricity. The most favorably located refrigerator saved 1.2 K.W.H. of electricity per week over the one most unfavorably located. At local rates in force this would only be $1.87 per year.



The new tea kettle fills a lot of daily needs

A New Tea Kettle

WHEN "Polly puts the kettle on for tea nowadays, all she needs to do is plug a cord into a convenient outlet and go about her business setting out the cups and things. Last fall a new electric tea kettle appeared in the shops. When you look at it from the front, it looks just like any other tea kettle. But when you see it in profile, you recognize that the little projection at the back is for the plug of an appliance cord.

The tea kettle has a 1000-watt heating element in the little bar across the bottom. This makes the water heat quickly; and it means, too, that the tea kettle can be run from any convenient outlet, but not from a lamp socket.

The kettle holds five pints, and if it is full, the water will boil in thirteen minutes. Two quarts of water will boil in eleven minutes; one quart in six minutes.

This little kettle fills a lot of daily needs.

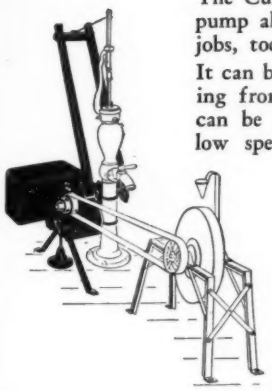
It gives you hot water for tea or coffee when the top of the range is full of dishes for dinner. It gives you boiling water for the children's cocoa in the morning. It heats up shaving water on demand; it gives boiling water to rinse the dishes in your drain pan.

It helps you on baking days.

"Two cups boiling water." Ready before you have the bowl out, the jelly powder open, and a spoon in your hand to stir with.

"One-half cup hot water." If you are making gingerbread, that water you want will heat while you are getting your sugar and 'lasses in the bowl. If you want to melt butter or chocolate, put them in a bowl and set the bowl into the top of the teakettle. They will melt in a hurry.

Run The Grindstone From The Pump Drive



The Cullman Electric Pump Drive will pump all your water and will do other jobs, too.

It can be furnished with a shaft extending from the pump drive, upon which can be mounted a power pulley. The low speed makes it ideal for driving grindstones, churns, etc.

If you want an automatic *pressure* system you can at any time add a Cullman Automatic Control and a Cullman Casing Head.

Send for a bulletin on Cullman Pump Drives and Water Systems.

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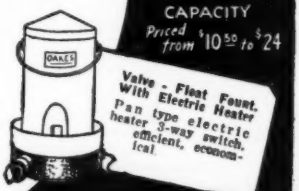


From a Can of Salmon

WHEN you are planning Lenten dishes for your family, there is much you can do with a can of salmon. Of course, I know that men joke a lot about our dependence on cans, and that some people do profess to sneer at salmon unadorned. If you are a reader of the homely philosophy of Aunt Het, created for the amusement of readers of American newspapers by Robert Quillen, you may remember the time she said,

"I thought Pa's cousin never would go home, but I give her canned salmon three nights hand running and she left."

Now, if Aunt Het had trimmed that salmon up a little, Pa's cousin might be visiting there yet. For the things a clever cook can do with salmon make it melt in your mouth, and make you ask for the recipe.

I myself like salmon right from the can with a nice juicy lemon to squeeze over it. But three nights hand running would make my family restive, I admit, so I have taken pains to collect salmon recipes that will make each can a different dish.

Here are two quite different recipes for salmon loaf. With either of them you can bake the whole dinner in your oven, if you like.

With the first one you might have baked potatoes, onions, baked with a very little bit of water in a tightly covered dish, and apple crisp. If you have an electric range, you may have the recipe in your cookbook for an apple crisp. If you haven't, I will be glad to send it to you. A cabbage salad will give you the raw vegetable for this dinner.

This is the salmon loaf:

1 large can of pink salmon. Remove skin and bones. Mash fine.
½ teaspoon salt
¼ teaspoon pepper
¼ teaspoon paprika
½ tablespoon lemon juice
3 egg yolks
½ Cup cracker crumbs
½ cup hot milk
3 egg whites

Mix salmon, seasonings, beaten egg yolks, cracker crumbs, and hot milk. Fold in egg whites beaten stiff. Pour into buttered loaf pan. Bake at 400° for one hour.

For the second dinner, you can use buttered beets and scalloped corn with your salmon. Date bars for your dessert will bake before the salmon loaf and vegetables go in. After the dinner comes out, you can heat the oven to 500° and bake biscuits while the coffee is percolating.

A cabbage and cranberry salad is good with this dinner.

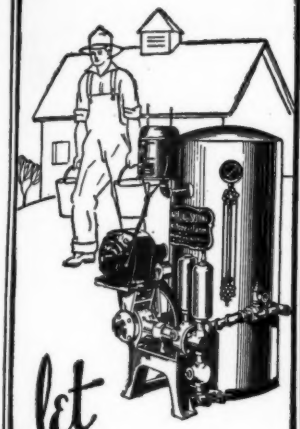
For the salmon loaf you use.

3 tablespoons butter
3 tablespoons flour
½ teaspoon salt
¼ teaspoon paprika
2 cups milk
3 eggs
1 lemon
1 teaspoon parsley
1 pound can salmon
½ cup bread crumbs

Make a white sauce of the first five ingredients. Let this cool; then add the beaten eggs, the lemon juice, and the parsley. Drain the salmon, take out the skin and the bones; then shred it. Put the salmon and the white sauce in a buttered baking dish in alternate layers, keeping some of the white sauce to cover the top. Sprinkle with toasted crumbs and bake.

Then, for the times when you want to get supper in the morning, or even the day before, there is a salmon mold that needs no cooking. One package of lemon jelly powder. Three tablespoons vinegar, and boiling water to make one pint. One-quarter teaspoon salt. One-quarter cup horseradish, drained. One cup salmon flaked. One cup peas. One cup cooked carrots diced.

Dissolve the jelly powder in boiling water. Add the salt and pour a small amount of the jello in the bottom of a loaf pan. Chill it until it is firm. Spread a thin layer of horseradish over the jello; then a layer of salmon, a layer of horseradish, and another layer of jello. When that has thickened slightly, add peas and chill until firm. Add carrots and another layer of jello, chill. Unmold this loaf on a platter and surround it with slices of cucumber pickles, or small firm chunks of canned tomato. Serve it with salad dressing.



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The Paul will work for you for a few cents each day! And the first cost is *much lower than you expect.* Use the coupon now and let us recommend the system for your needs.

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A Prater Mill is always ready for grinding at the turn of the power switch. With a 2 to 5 horsepower motor, you can grind all the feed necessary for your live stock and poultry in a few hours' time once a week.

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PRATER MILL

Guaranteed to Be Satisfactory to You

Questions and Answers

Conducted by H. J. GALLAGHER

Note—Readers are invited to send in questions which will be answered in the order received. Names are omitted from questions unless otherwise specified.

Question: *I have a small hot air type incubator. Can it be changed to operate with electricity? — Alex E. Fisher, Madrid, New York.*

Answer: The small hot water or hot air incubator is easily converted into a electric incubator by substituting electric heating elements for the oil or lamp heater. The heating elements may be the same as used in reflector type heaters. They have a screw base that fits the standard light receptacle. The receptacles should be porcelain and the heating elements should be wired in series so as to furnish a black heat.

H. J. GALLAGHER

The number of elements will vary as to the size of the incubator. Two heating elements have proven satisfactory for 100-150 egg incubators.

These incubators are already equipped with a thermostat to control the heat and the same thermostat can be converted for electric operation to serve the same purpose.

The heating elements should be in a well insulated container to conserve all the heat possible. A layer of insulating material over the top of the incubator further retards heat loss.

(*While conversion of an incubator is a simple operation, it should be borne in mind that best results are secured from equipment designed originally for electric operation. Highly efficient electrical incubators can now be purchased at moderate cost, and can be operated more economically than converted ones. Hatching eggs is one job which electricity can do best when the equipment for this purpose is engineered and constructed by specialists who are in a position to give the proper balance to all factors upon which successful operation depends.*—EDITOR.)

Question: *I wish to drive an emery wheel, 10" in diameter, 2" face, to sharpen cultivator blades and similar farm tools, what size motor ought I to have.—John E. Francis, New Lenox, Illinois.*

Answer: A ½ H. P. motor.

Question: *I have a well 36 feet deep with 18'-20' of water. Can I use a ¼ H. P. motor on a rotary pump, suction line 1½", water to be elevated to an open tank directly above the well?—Alex E. Fisher, Madrid, New York.*

Answer: To elevate water 15 feet through a 1½" suction pipe with a direct connected rotary pump a ½" H. P. motor would be required. At 20 feet, a ¾ H. P. motor would be required. Water through a rotary pump of this size would flow at the rate of 55 gallons per minute or 3300 gallons per hour.

Question: *I have an electric motor that is giving me some trouble. It sparks a lot when I turn the switch and it turns over but will not run.*

Answer: I think all of your trouble is in the brushes, dirt may be in the brush holder, there may be rough spots on the brush or

(*Continued on page* 48)

The PIRATE

IT isn't a question of whether or not a profit can be made from farming; it's just a matter of *How Much Profit* . . . providing of course that you don't allow the Pirate — *INEFFICIENCY* to undermine your operations.

The biggest factor today in *Profitable Farming* is the generous use of Electricity. It isn't enough to only *light* your home with it . . . that's merely a convenience. To really derive maximum benefits you should put this powerful servant *to work*. You should saw wood electrically . . . pump water . . . spray . . . milk . . . use electrically operated brooders and hatcheries . . . grind feed . . . ventilate . . . refrigerate . . . in fact there are numberless profitable applications for electrical energy *on every farm*, large or small.

¶Call in your local Electrical Contractor. Let him prepare a *Wiring Survey* and make recommendations for efficient wiring extensions. You will find that he is well qualified to install *KNOB & TUBE WIRING*. He will tell you why it is the Safest and most Dependable system of Long Life wiring available, and we can assure you that the *KNOB & TUBE SYSTEM* will be the *least expensive* to install.

The sponsor manufacturers listed below will gladly put you in touch with a competent contractor upon request.

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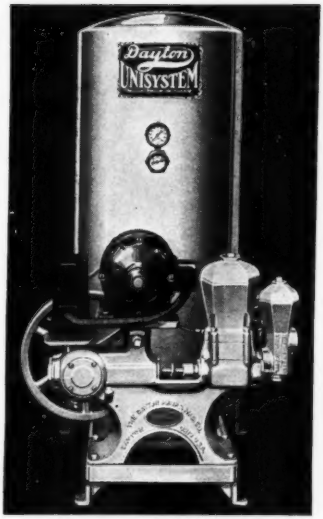

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A DAYTON system will provide all the water you need from your well, spring or stream. There is a size and type for every requirement. All models, from the famous DAYTON Cub on up, are automatic, self-oiling, quiet, fool-proof. All are low priced—the Cub is $65.00 f.o.b. Dayton; other models proportionately low, depending on capacity. Write for complete descriptions and prices. The Dayton Pump & Mfg. Company, Dayton, Ohio.

Dayton WATER Systems

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The Dayton Pump & Mfg. Co.,
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Please send me complete information and prices on Dayton Water Systems.

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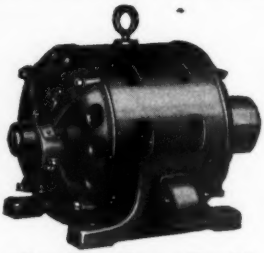
Make the *WATER* Do the Running



5 Horse Power Century Type RS Repulsion Start Induction Single Phase Motor

Use Century Motors

Plan now to let Century Motors do the many hard jobs that you have been needlessly doing by hand . . . Century Type RS Motors are particularly suited to farm use. Their ability to "Keep-a-Running" with little attention has been demonstrated in thousands of farm applications — some for more than 25 years . . . Write for complete information on Century Motors for farm use.

CENTURY ELECTRIC CO.
1806 Pine St. St. Louis, Mo.

40 U. S. and Canadian Stock Points and more than 75 Outside Thereof

Century MOTORS

Just Push a Button in Your Kitchen and

The LAUSON **Electric Jack will make your old pump hump**

Deep or Shallow well, it works unfailingly—any weather.

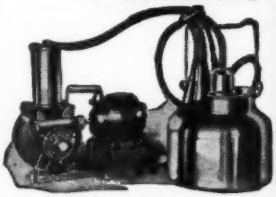
Built Like a High Grade Auto Transmission

Fully enclosed running in oil. No chains or sprockets. Improved Safety design—and almost noiseless.

Also Complete Water Systems. Write for Literature.

The John Lauson Mfg. Co.
700 Michigan St., New Holstein, Wis.

Fords Milker **$100** Single Unit Complete



Less Rubber Touches Milk

in Ford's Milker than in any milker using rubber lined cups. No long pipe line to hold bacteria. Easier to clean thoroughly because fewer parts and completely accessible. Fords Milker Method is easier on cows—produces more and higher priced milk. Light and easy to handle—yet amazingly durable. Fully guaranteed. Many models to fit any barn condition.

Send for Catalog No. 74.

Myers-Sherman Company
213 N. DesPlaines St.
Chicago, Ill.

Winners—January Front Cover Title

First Prize—$25.00: "Dawn of a Powerful Year"

Mrs. E. P. Avery, R. F. D. 1, Marne, Mich.

The following titles have been selected as the winners of the $5 cash prizes:

"With electric wire on his arms, New Year steps in to brighten farms," Mrs. Geo. Steinwand, R. F. D. 2, Colby, Wis.

"The current year with rapid stride, Brings power and light to the countryside," Mrs. Seymour Dane, R. F. D. 1, Homestead, Fla.

"May the current year with rapid stride, Bring power and wealth to the countryside," Orba A. Kepner, R. F. D. 4, Box 85, Kokomo, Ind.

"Time has arrived to electrify our farm," J. T. Evans, Box 689, Boise, Idaho.

"Only in its infancy, but stepping right along," Mrs. W. B. Van Cleave, R. F. D. 4, Council Bluffs, Iowa.

Rules for March Contest

For the best title to the front cover illustration, a cash prize of $25.00 will be awarded.

In addition we will pay $5.00 for each of five titles given honorable mention.

In case of a tie, each winning contestant will receive the full cash prize to which he or she is entitled.

The winners will be announced in the May issue.

Only the farmers or members of the farm family, to whom this magazine was sent, are eligible.

Only one title may be submitted.

Use the form below or write your answers on a plain sheet of paper in similar form.

Be sure to answer question (a).

Write plainly and send your suggestion to the Title Editor, ELECTRICITY ON THE FARM, 225 West 34th St., New York, before April 1.

My Title for March Front Cover picture is.....

.....

.....

.....

.....

.....

(a) In what town (or city) do you generally trade?.....

.....

How far is it?.....

What is the population?.....

Name..... R. F. D.....

Post Office..... State .....

The General Purpose Motor on the Farm

By HARRY L. GARVER
Investigator, Washington, C.R.E.A.

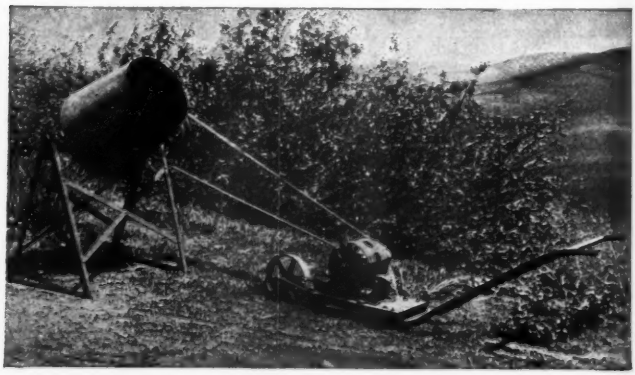
THE question often arises as to what constitutes a universal farm motor. Perhaps there should be two farm chore motors, a 5, or 7½ H. P. for grinding or chopping feed, cutting hay, filling the silo, sawing wood, and elevating grain and hay; and a small one for doing the little chores like turning the grindstone or emery wheel, cutting green feed, mixing feed, running the seed cleaner, mixing concrete, churning, running most machines in the farm shop, and operating the pump where water is not supplied by gravity or by means of an automatic water system. For these jobs a ½ or ¾ H. P. motor is sufficient.

The little motor shown in the accompanying illustration is ½ H. P., and is belted to a small John Deere concrete mixer. In a test the little outfit was more than enough to keep two men busy pouring a concrete floor. Three and three-fourth yards of concrete (1:2½:5 mix) were mixed in 4¾ hours. It used only two kilowatt-hours of electric energy in saving a great deal of hard labor and getting something worth while done. Had considerable spading or troweling been necessary, a third man would have been required.

Many Tasks May be Handled by the Chore Motor

Another chore assigned this motor was that of cutting green alfalfa for poultry. Still another was operating a grain cleaner. In the case of the grain cleaner, however, a jack shaft was required in order to get the correct slow speed, but had the cleaner been purchased with the intention of operating it with a small universal motor, the proper pulley could have been supplied quite readily, and at little or no additional cost.

The method of mounting the motor as shown in the illustration has proved quite convenient. The motor base is mounted on a piece of 2" plank which in turn is mounted on three legs. The bolts which hold the legs in place pass through the plank, down through legs and extend about three-fourths of an inch below the nut at the bottom. These extended ends are then sharpened. Suitable grips may be placed on the motor or base for lifting into a wheel-barrow, or a wheel and handles may be mounted on the plank with half-yokes as shown in the picture. In no case where this outfit was ap-

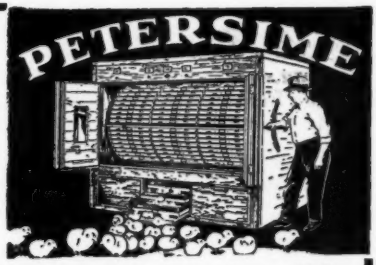


The General Purpose Motor Saves a Lot of Heavy Labor in Turning the Mixer

An *Electric* INCUBATOR

. . . that Challenges any Incubator, of Equal Size . . . to Equal Its Capacity, Simplicity of Construction, Dependability, Length of Service, High Resale Value, and Records for Producing Large-size, High-quality Chicks at Low Cost.

Write for complete details today.



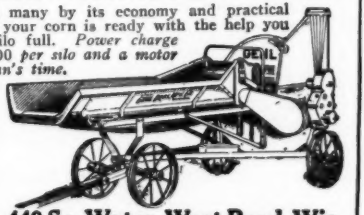
IRA M. PETERSIME & SON, EF-3, Gettysburg, Ohio

GEHL FILLS SILOS WITH A 5 H.P. MOTOR

A Combination that has surprised many by its economy and practical features. Fill your own silo when your corn is ready with the help you have on your farm and get the silo full. *Power charge amounts to only from* $3.00 *to* $5.00 *per silo and a motor requires no attendant, saves one man's time.*

The Gehl Cutter requires less power because of its low speed, is absolutely self-feeding, has auto type gear shift, all gears in oil, boiler plate flywheel, ball bearings. Can be had self-contained, motor mounted right on cutter.

Write for full information about cutter and running with 5 H.P. Motor.



GEHL BROS. MFG. CO., 449 So. Water, West Bend, Wis.

Specializing in ELECTRIC EQUIPMENT for the Poultryman

The LYON ELECTRIC COMPANY manufacture electric poultry equipment exclusively. Our long, practical experience in the highly developed California rural electric field enables us to furnish you quality devices at reasonable prices.

The LYON line includes: Brooders — Incubators — Egg Testers — Burglar, Temperature, and Power-off Alarms — Heating Elements — Thermostatic Supplies — Time Switches — Wiring Supplies. Write for catalog today.

LYON ELECTRIC CO.
2075 Moore St. San Diego, Calif.

45 Years' Experience

The fact that **GILLETTE CLIPPING** and **GROOMING MACHINES** have been manufactured for the past 45 years should be sufficient recommendation for every progressive farmer to invest in one immediately. They operate on the light circuit furnished by any Electric Light & Power Co., or any make of Farm Lighting Plant.

Dealers—Send for attractive price list.

Gillette Clipping Machine Co., Inc.
129 W. 31st St., Dept. 11, New York City

45 Years Making Dependable Clipping and Grooming Machines

In the kitchen, bathroom, cellar; in the barn, for watering stock. A Kewanee System brings it for a **few cents a day**—under enough pressure to give real fire protection.

200 Models and Sizes. All made "overstrength" and "oversize." Every part made just right for every other part—all fitted and accurately adjusted at the factory. **That's why they do more work with less current, and stay "on the job" without repairs.**

As low as $103. Ask for complete information, also helpful bulletins on our complete water, sewage disposal and lighting systems.

KEWANEE
HIGH PRESSURE WATER SYSTEMS
KEWANEE PRIVATE UTILITIES CO.
464 Franklin St., Kewanee, Ills.

SMITH ELECTRICS

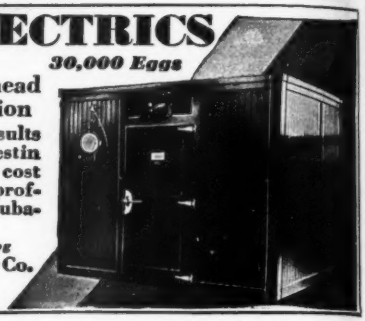
52,000 Eggs ***30,000 Eggs***

The Farthest Step Ahead in Electrical Incubation

FIRST in performance, results and quality chicks. Lowest in current consumption and cost of operation—highest in profits. The outstanding incubator of today.

Write for new Electric Catalog

The Smith Incubator Co.
3192 W. 121st St.
Cleveland, Ohio



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NEW WAY TO MILK COWS

The Surge Milker

Free Demonstration

Ask for free demonstration of this wonderful new milking machine The Surge milks cows like no other machine ever milked cows before—milks them faster, cleaner and better! Has NO long Tubes—NO Claws. Overcomes bacteria troubles Milk travels only 4 inches from teat to to pail Write at once for free catalog and details of our Free Demonstration Offer, Easy Terms and rock bottom prices.

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SAFEGUARD

Electric Four Purpose Alarm

warns you in case of burglary, fire, failure of highline current or change in brooder temperature. Protects one or all buildings.

Cannot be beaten in any known way; simple to install and economical to operate. Sold under money back guarantee. If your dealer can't supply you, write

SAFEGUARD ALARM CO. Inc.
Council Bluffs, Iowa

free

"How to increase your dairy profits" BOOKLET!

Address

LIPMAN MILK COOLING SYSTEMS

GENERAL REFRIGERATION CO.
2403 SHIRLAND AVE. BELOIT, WISCONSIN

Questions and Answers

(*Continued from page* 42)

there may be the wrong tension on the brush spring.

Remove the brushes, clean out the brush holders and sand the brushes slightly with 00 sandpaper. Replace brushes, start the motor and while it is running sand the commutator.

Farm Motor

(*Continued from page* 46)

plied were the handles or wheel found to be in the way. Tightening of the belt was also facilitated when the handles were used. The cable used should be at least thirty feet long and well insulated Three or four sizes of pulleys (2", 3", and 4") will meet most of the requirements.

Archaeologists digging into ruins of a village that existed 6,000 years ago recently unearthed a stone tablet depicting one of the ancients milking a cow, but working from the rear, with the animal's tail over his head. In sixty centuries the chief advance in hand-milking was moving one-fourth of the way around the cow. But the modern milking machine is speedily changing the picture.

"Say, do you know anything else but Golf-Golf-Golf?" asked the irate wife "Why, if you spent one Sunday at home, I think the shock would kill me!"

"It don't do you any good to talk like that," returned the husband. "I refuse to be bribed."

DOUBLE CAPACITY *Refrigeration*

at half the price

Glenn Dairy Icer

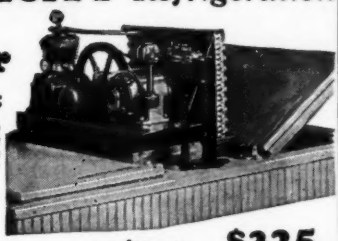
"A machine that will do the work . . . at a price you can afford to pay."

Cools 30 cans of milk. . . . Costs only 5c an hour to operate. Built for heavy duty by engineers who know dairy needs. Write for free, working plans on dry box or concrete tank construction.

Dealers: Write for Open Territory

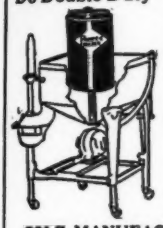
Dairy Refrigeration Co.

Dept. G—311-64th Ave., Milwaukee, Wis.



as low as **$325**

Make Your Washing Machine Do Double Duty



Wash your dishes the Dixie Way, and Churn your butter the Dixie Way. Saves all the hard work and saves 60% of your time. Just attach this simple device to the center post of any modern washing machine to do all this.

Write your dealer for full information, or, if he cannot supply you, write us.

COLE MANUFACTURING CO.
BIRMINGHAM, ALA.

CLIPPER

Cows—Horses by Electricity

Clipped cows give more milk, better milk, cleaner milk, at lower Feed Cost. Clipped horses do work better, look better and feel better. Cleaned in half the time.

Write for STEWART CLIPPER CATALOG

Describes full line, including Stewart Stockman priced at about ½ previous electric models. A powerful, one man machine with heavy-duty ¼-horsepower motor.

CHICAGO FLEXIBLE SHAFT CO.
5524 Roosevelt Rd., Chicago

Electrical Heating Units

for all purposes in poultry raising and around the farm.

Write for descriptive Bulletins

RUSSELL ELECTRIC CO.
340 West Huron St. Chicago, Ill.

Ask Your Power Co.

About the now famous **Smith Brothers Electric Brooder**, which can be ordered direct from this list:

18 in.	75 chick size,	$9.50
24 in.	100 chick size,	10.75
32 in.	200 chick size,	16.00
42 in.	350 chick size,	20.00
56 in.	600 chick size,	24.00
72 in.	1000 chick size,	36.00

WELLINGTON J. SMITH CO.
935 Davis-Farley Bldg., Cleveland, Ohio

BEVAN

Roller Bearing Electric Pumpers for shallow and deep wells

Literature on request

ACME MACHINE CO.
2901 Fremont Ave. S.
Minneapolis Minn.

NEW WAY TO CHURN

Here's the new way to churn thousands are turning to. Famous DAZEY principle adapted to motor operation. Ends the drudgery. Just turn the switch. Amazing results. Simple, convenient 2, 4, 6 and 10 gallon sizes. Write today for catalog and further information.

DAZEY CHURN AND MFG. CO.
Warne & Carter Aves., St. Louis, Mo.
Dept. 27

Arguments for the Range

My home contains all the electrical equipment found in the modern home today. The Monarch electric range, installed three years ago, is my favorite servant for the following reasons:

1. Used more than anything else in the home.
2. Fits my small kitchen to a T.
3. Is more attractive, dependable, sanitary, compact and economical than any other range.
4. Makes a happy environment in our home.
5. Exact amount of heat is at my command by simply turning a button.
6. Without care or attention the automatic heat control insures perfect baking.
7. Safety switch protects my small child from burns and even death.
8. Oven and lids retain heat long after the current is turned off.
9. Eliminates the use of matches and the fear of a chimney fire.
10. Keeps kitchen cool in summer.
11. Easy to clean and odorless.
12. Saves so much time and worry it is possible to do my housework, care for my small child, raise chickens, work in the garden, tend to the lawn and flowers, besides exhibiting at fairs and attending club meetings or entertainments.
13. It always wins the admiration of my neighbors and friends when they call.

Mrs. A. C. Woodman,
R.F.D. No. 2, Janesville, Wis.

Many Favorites

All our electrical servants are favorites. I presume we would miss most of all the lights, but they are such matter of fact necessities that they fail to receive the appreciation they deserve. Doubtless the wife would most regret to dispense with her washing machine or stove. The hired man would miss the milking machine most and I'd certainly miss the money it saves, but the thing that gets my vote as extra special favorite is the electric heating pad. When you climb into an icy bed with cold feet and find a cozy nest for them warmed by the pad, that's sheer luxury and "What a grand and glorious feeling."

Orrin M. Smith,
Wolcott, N. Y.

Must Give Up Lights

We will only have until March to enjoy our lights. We are moving to another farm without lights and while we have only had them here for one year, we dread giving them up. Our landlord has seen the advantage of them as he is coming here himself. His present home is located where it may be some time before they can have them. I know we will never have any convenience we enjoyed more than our electric power.

Mrs. Bert E. Warner,
Thomasboro, Ill.

Butter Churn First

My electric butter churn is my favorite electrical servant. Before the electric churn I had to pay a man $6.00 a week to turn the butter churn, sometimes he was all day at it, now I save that $6.00 and add $10.00 to it from the sale of my butter and buttermilk. My customers say it is the best buttermilk they ever tasted, and it is. The buttermilk will keep for days in the refrigerator. I could not do without my butter churn though I have been offered much better prices than what I paid for it.

Belle A. Oliver Simmons,
Box 178, Suffolk, Va.

All Time Savers

Because of the many electrical servants it is hard to decide which one I favor. They are all time-savers and powerful helpers, but I think the range is the outstanding one. It is not only a time-saver, compared to the wood range, but also a fuel saver. It's convenience is a wonderful help. I place my prepared dinner in the oven and leave for the field or garden. By dinner time I return and find the meal ready. In baking I put in the dough, set the regulator, then go off to do other urgent work, and return to find whatever it may be ready to be removed.

Miss Alice Siemers,
R. 1, Cleveland, Wisconsin.